



FEMA

# Breaking the Cycle – Adapting Smart Growth Approaches to Local Flood Resilience Planning

## Case of Tipton Resilience Plan An Action Discovery Project as part of the Upper White River Watershed Discovery Report

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**RiskMAP**






Increasing Resilience Together

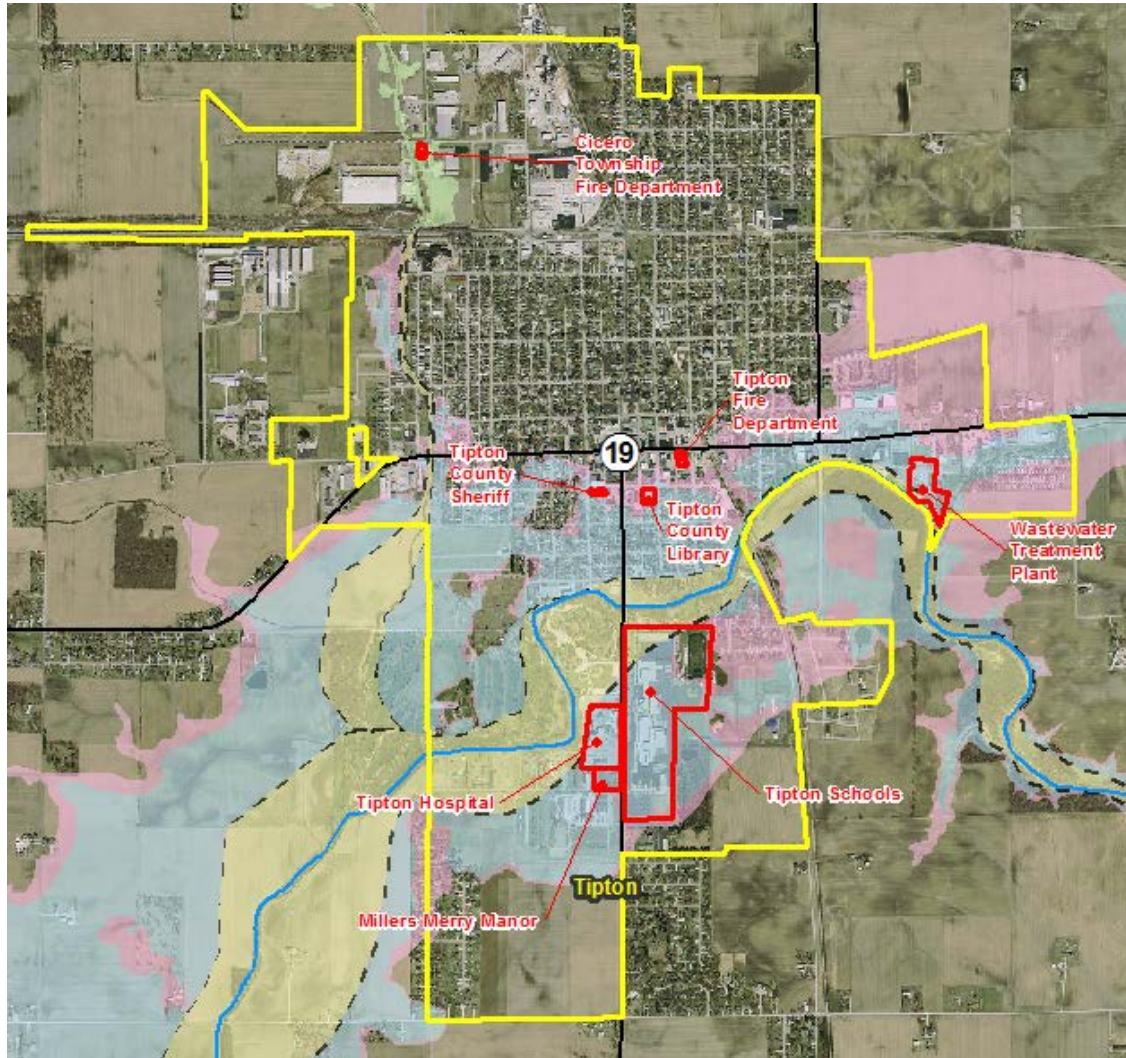


# Flood Resilience Planning

- **Flood resilience** means “measures taken to reduce the vulnerability of communities to damages from flooding and to support long-term recovery after an extreme flood.”
- Examples include:
  - Integrating EPA’s Smart Growth principles into state and local policies
  - Enhancing Local development regulations
  - Integrating strategies in Hazard Mitigation and Comprehensive Land Use Plans

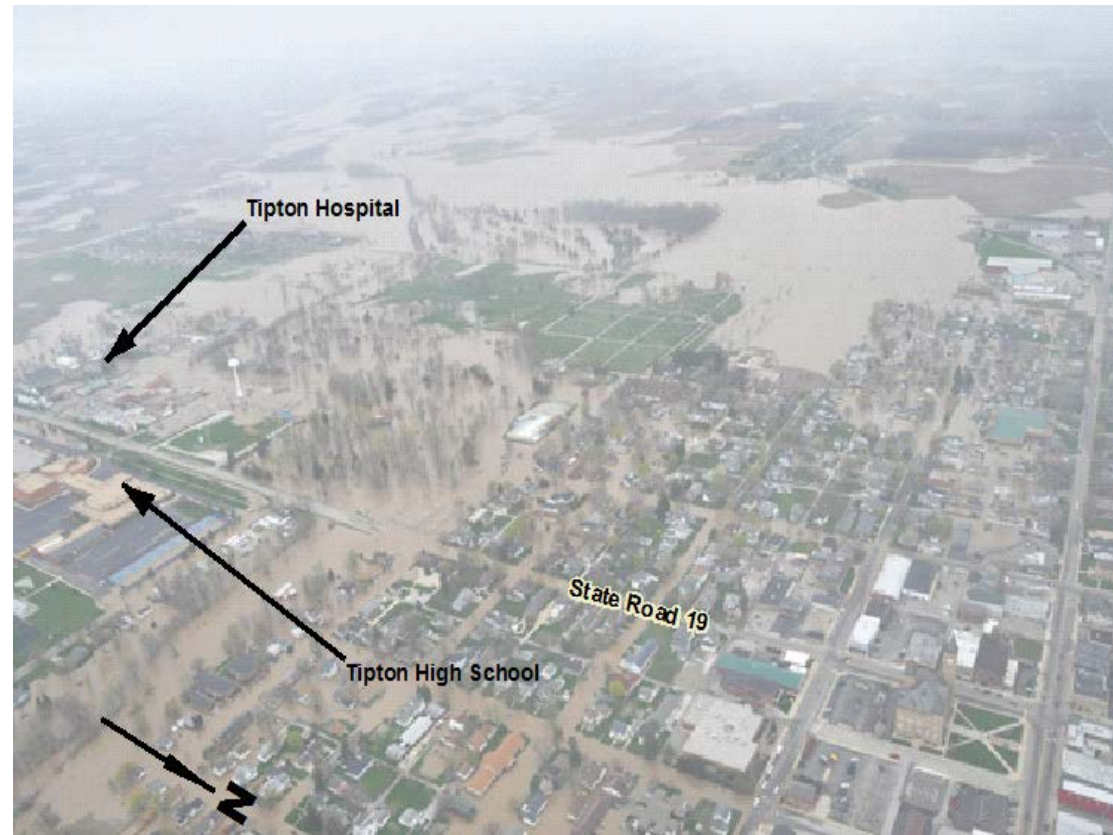
# The City of Tipton – Flood Zones

- Flood Zones**
-  Floodway
  -  1.0% ACFH
  -  0.2% ACFH
  -  Zone A
  -  Critical Facility



# Why Tipton Flood Resilience Plan

- **A Major recommendation of the Nov 2014 Big Cicero Creek Watershed Flood and Erosion Risk Management Plan**
- **Recognition that severe floods are expected to occur again, while no feasible effective flood control alternative exists**
- **Desire for a resilient, economically viable City despite its flood vulnerable settings**



April 2013 Flood – Tipton, Indiana



# Flood Resilience Strategies for Tipton

## ■ **Adopt Overall Strategies**

- Conducting regular audits of policies, regulations, and budgets
- Checking for consistency, updating, integrating, and revising plans, policies, and regulations
- Participation in the Community Rating System

## ■ **Adopt Specific Land Use Strategies for Distinct Geographical Areas**

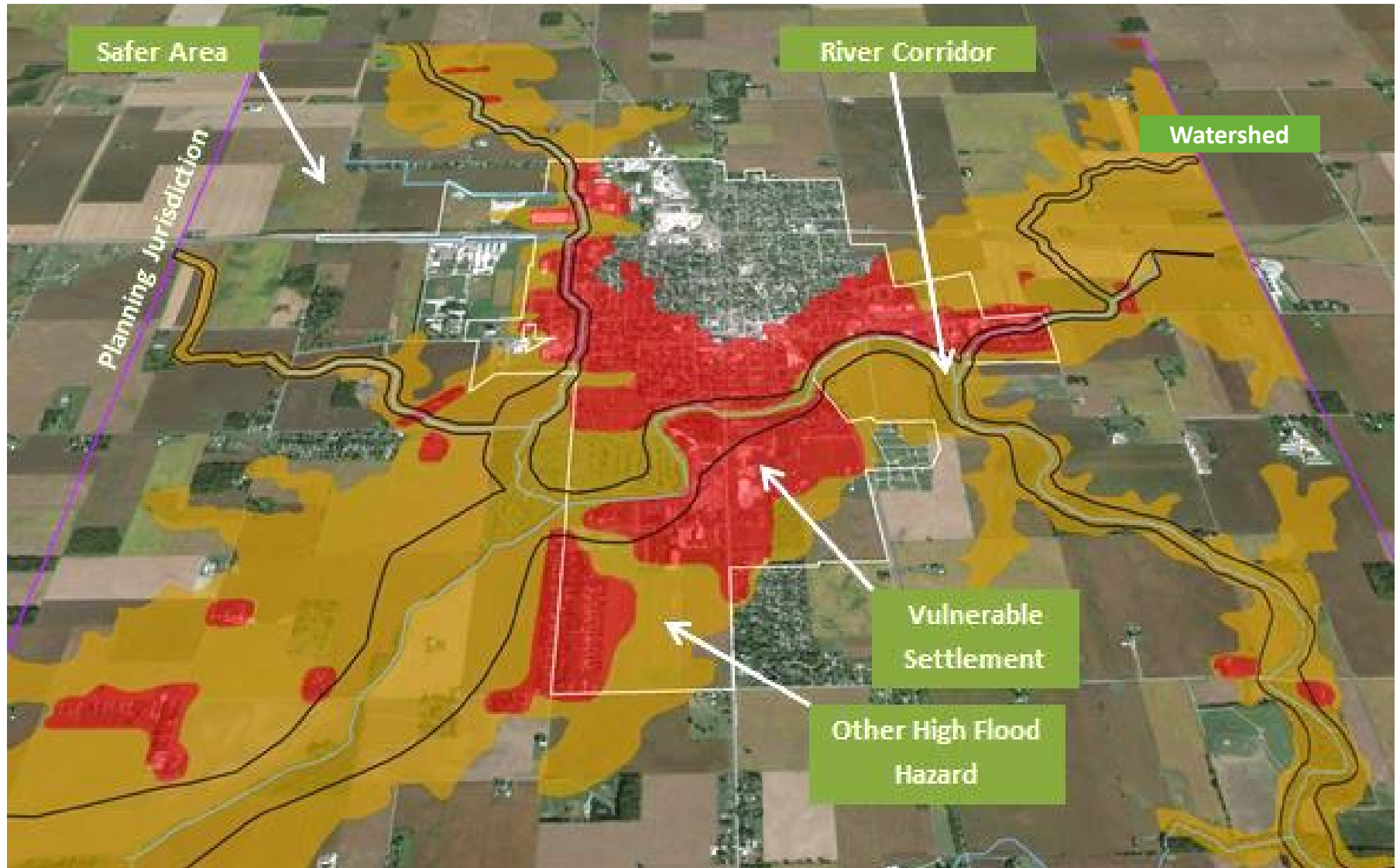
- River Corridors (floodway and erosional corridors)
- Other Flood Hazard Areas (floodway fringe areas)
- Vulnerable Settlements (developments already existing in harms way)
- Safer Areas (low flood risk areas)
- The entire Watershed (the Big Cicero Watershed)

# Strategies for Flood Resilience

## ■ Overall Strategies

1. Update floodplain regulations
2. Adopt flood elevation data from updated flood studies
3. Adopt a comprehensive stormwater ordinance and technical stds
4. Update, integrate and revise plans, policies and regulations
5. Conduct regular audits of programs and policies
6. Participate in the Community Rating System

# Flood Resilience Planning Areas



# Flood Resilience Planning Areas

Planning Area	Area Boundary	Intent of Area Strategy
River Corridor	Floodway or fluvial erosion hazard area, whichever is greater	To conserve land and prohibit new development
Other High Flood Hazard Areas	Undeveloped land in the floodway fringe	To conserve land and maintain the natural and beneficial function of the floodway fringe
Vulnerable Settlements	Existing developed land in the SFHA (floodway fringe and floodway)	To protect people, buildings, and facilities in vulnerable areas and reduce future flood risk
Safer Areas	Outside the SFHA but within the planning jurisdiction	To plan for and promote development in areas that are less vulnerable to future floods
Watershed	Entire drainage area	To promote coordination and partnerships and implement practices to slow, spread, and infiltrate flood water



# Strategies for Flood Resilience

- **River Corridor**

1. Adopt a river corridor overlay zone and prohibit land disturbance in this zone
2. Protect undeveloped land in the river corridors
3. Minimize streambank erosion

# Strategies for Flood Resilience

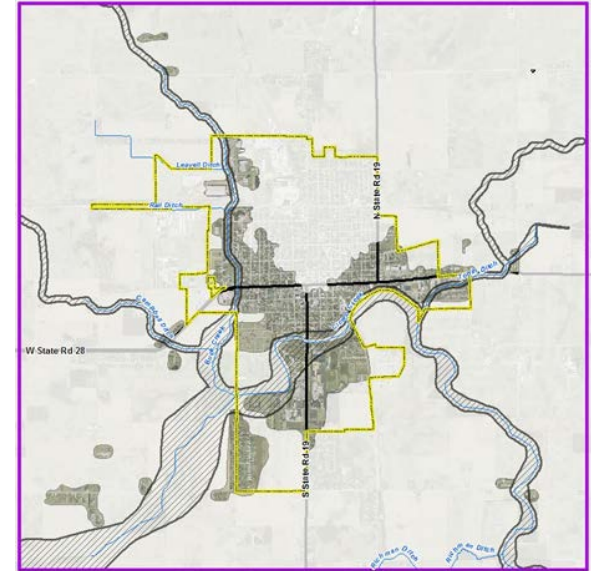
- **Other High Flood Hazard Areas**

1. Prohibit development in the floodway fringe (including critical facilities)
2. Protect undeveloped land in the floodway fringe
3. Adopt compensatory floodplain storage requirement (where placement of fill is unavoidable and variance is granted)

# Strategies for Flood Resilience

## ■ Vulnerable Settlements

1. Protect existing critical facilities
2. Buyout structures
3. Floodproof structures
4. Bring nonconforming uses into compliance
5. Create new flood storage capacity through redevelopment
6. Require building expansion and new accessory structure to meet additional requirements
7. Adopt a flood response plan
8. Adopt post-flood damage assessment data collection and protocols
9. Connect people to the river



# Strategies for Flood Resilience

## ■ Safer Areas

1. Steer public policy and investment to support development in safer areas
2. Promote conservation design
3. Promote placement of critical facilities in safer areas



# Strategies for Flood Resilience

- **Watershed**

1. Support the efforts of the Big Cicero Creek Drainage Board (and implementation of the 2014 Big Cicero Watershed Flood and Erosion Risk Management Plan)
2. Adopt a natural resource overlay zone



# Where do we start?



- **Prevent** any increase in flood vulnerability (steer new development to safer areas)
- **Prepare** for the next flood (flood response plan, education, outreach)
- **Reduce** Flood vulnerability (relocate and/or floodproof bldgs and infrastructure)

# Bottom Line

- **Enough is enough (need to break the cycle!)**
- **Implications of climate change**
- **Need to change mindsets – balance structural and nonstructural (planning and policy-based) solutions**
- **Prevent, Prepare, Reduce!**

**Link to Report:** [http://cbbel-in.com/wp-content/uploads/2016/12/Tipton-Resilience-Plan\\_LR.pdf](http://cbbel-in.com/wp-content/uploads/2016/12/Tipton-Resilience-Plan_LR.pdf)



# Questions or Comments?



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